



August 28, 2001

Harry M. Schueller, Chief
Division of Water Rights
State Water Resources Control Board
1001 I Street, 14th Floor
Sacramento, CA 95814

Dear Mr. Schueller:

The following are the comments of Defenders of Wildlife, an environmental organization dedicated to the protection of all wild animals and plants in their natural communities, with over 430,000 members nationwide, a quarter of whom live in California. We thank the State Water Resources Control Board (SWRCB or Board) for hosting this public meeting, and we appreciate the opportunity to provide comments. As discussed in more detail below, we urge the Board to exercise its permitting jurisdiction over groundwater to the fullest extent to protect aquatic and terrestrial plant and animal species that depend on surface and subsurface waters, and we request that the Board pay careful attention to the effects of groundwater pumping on instream flows and subsurface waters that support riparian habitat in exercising that jurisdiction.

According to the Biological Resources Division of the U.S. Geological Survey, freshwater fishes are the single most imperiled vertebrate group in the United States. (Michael A. Bogan et al., *Regional Trends of Biological Resources—Southwest*, in 2 Status and Trends of the Nation's Biological Resources 543, 565 (U.S. Geological Survey ed., 1998), *cited in* Holly Doremus, "Water, Population Growth, and Endangered Species in the West," 72 University of Colorado L. Rev. 361, 366 (2001).) More than half of California's fish species are extinct or on the road to extinction if current trends persist. (Stephen D. Veirs, Jr. et al., *Regional Trends of Biological Resources—California*, in 2 Status and Trends of the Nation's Biological Resources, at <<biology.usgs.gov/s+t/SNT/noframe/idx-ca.htm>>.) Nineteen of the 77 species listed under the California Endangered Species Act are fishes, and many of the remaining listed species are dependent upon aquatic, riparian, habitat. (Department of Fish and Game, *State and Federally Listed Endangered and Threatened Animals of California* (July 2001).)

It has long been recognized that groundwater pumping can affect surface flows, and thus surface-water dependent biota. Over fifty years ago, a leading Arizona hydrologist observed: "Groundwaters are derived from surface waters, and much surface water stream flow is derived from groundwaters. The effective protection of either one involves some degree of control over the other." (G.E.P. Smith, "Groundwater Law in Arizona and Neighboring States," 47 (U. of Ariz. C. of Agric. Tech. Bull. No. 65, 1936), *quoted in* John D. Leshy and James Belanger, "Arizona Law Where Ground and Surface Water Meet," 20 Ariz. St. L. J. 657, 658 (1988).) Groundwater pumping can affect aquatic or terrestrial species by simply depleting the surface flow of a stream or level of a lake. Pumping can also affect aquatic or terrestrial animals by lowering the water table below the roots of riparian vegetation.

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Water Code section 1243 provides that “[i]n determining the amount of water available for appropriation for other beneficial uses, the board shall take into account, whenever it is in the public interest, the amounts of water required for . . . the preservation and enhancement of fish and wildlife resources.” To fulfill its obligation under section 1243, the Board must exercise its permitting jurisdiction over groundwater to the fullest extent, and it must pay particular attention to the effects of groundwater pumping on surface and subsurface flows that support wildlife and wildlife habitat in doing so. The Board must also exercise its jurisdiction to the fullest extent to fulfill its obligations to uphold the public trust and ensure the reasonable use of California’s water resources in accordance with Article X, Section 2 of the Constitution.

As discussed below, in our view river groundwater pumping that diminishes surface or subsurface flows is analyzed according to the rules applicable to surface water diversions, and the Board’s permitting jurisdiction encompasses any such groundwater withdrawal according to those rules.

1. *What is the scope of the SWRCB’s water right permitting authority over groundwater?*

Any person wishing to appropriate water in California must file an application for permit with the Board. Water Code section 1200 describes the waters to which the Board’s permitting authority applies:

Whenever the terms stream, lake or other body of water, or water occurs in relation to applications to appropriate water or permits or licenses issued pursuant to such applications, such term refers only to surface water, and to subterranean streams flowing through known and definite channels.

2. *What is the current legal test for determining whether groundwater is subject to the SWRCB’s permitting authority?*

Water Code section 1200 supplies the starting point for determining whether groundwater is subject to the Board’s permitting authority. If the groundwater at issue is withdrawn from a surface water body or a subterranean stream flowing through a known and definite channel, the water should be considered as surface water for purposes of determining the Board’s jurisdiction. There are two primary lines of authority that inform the extent to which groundwater pumping may withdraw water from surface flows or subterranean streams. The line that is better known begins with *City of Los Angeles v. Pomeroy* (1899) 124 Cal. 597, and focuses on a distinction between subterranean streams flowing in known and definite channels and “percolating” groundwater. The other line, which has a somewhat older lineage in California that extends through and beyond *Pomeroy*, holds that a groundwater withdrawal that diminishes the surface flow or subterranean flow of a surface stream is subject to the same law as a surface water diversion.

In *Pomeroy*, the City of Los Angeles brought a condemnation action against the owners of about 315 acres of land where the City intended to build a portion of its municipal waterworks. (*Pomeroy, supra*, 124 Cal. at 604.) The classification of groundwater became an issue because the landowners claimed that their compensation should include the value of the groundwater they had been pumping. The City claimed that there should be no compensation for

the value of the alleged groundwater rights because the groundwater formed a portion of the Los Angeles River, to which the City claimed all rights.

In the course of holding for the City, the Supreme Court stated that there was “no dispute that subterranean streams flowing through known and definite channels are governed by the same rules that apply to surface streams.” (*Id.* at 632.) The court elaborated on the rules governing subterranean streams by quoting from Section 48 of *Kinney on Irrigation*:

... if underground currents of water flow in well defined an known channels, the course of which can be distinctly traced, they are governed by the same rules of law that govern streams flowing on the surface . . . Defined means a contracted and bounded channel . . . and the word ‘known’ refers to knowledge of the course of the stream by reasonable inference.

(*Id.* at 633.) The Board has employed the criteria just quoted, with very little modification, in recent decisions regarding the classification of groundwater.

However, *Pomeroy* was also one of the earlier cases in a second line of authority focusing on whether groundwater and surface water are hydrologically connected, although this aspect of the case has received less attention. In the *Pomeroy* trial court’s instructions to the jury, which are quoted at length in the Supreme Court decision, the court paid at least as much attention to issue of hydrological connection as it did to the distinction between percolating groundwater and subterranean streams. Take, for example, instruction XVI:

It does not always follow that water which does not flow on the surface in a visible stream is for that reason not a watercourse, or not a part of the water of a stream which does at some place run on the surface; nor need it flow in a defined channel underground as a solid body of moving water of any particular dimensions in order to constitute a watercourse.

If you find from the evidence that there is a bed or a river bottom filled to a considerable depth with sand, gravel, or other porous material, meandering over which a stream runs on the surface, and through and in which the water moves underground, enough of it rising to the surface to supply the surface stream, and the other portions of the underground water moving with a much less velocity than the surface stream, and through a wider or larger space in and through the interstices of porous material, but in the same general direction as the surface stream and in connection with it, and in a course and within a space reasonably well defined, the conditions being such that the existence and general direction of the body of water moving underground can be determined with reasonable accuracy, *then that portion of the water thus moving underground should be considered as part of the watercourse as well as that part which flows over the surface.*

If such watercourse exists, it is immaterial, so far as the watercourse is concerned, from or through what lands the waters flow in reaching the channel, or whether they reach the same by percolation or by clearly defined streams.

(*Id.* at 623-24 (emphasis added).) In this lengthy instruction, the court essentially states that any

groundwater that contributes to either the surface or the subsurface flow of the Los Angeles River is to be considered part of the river. Although defendants objected to this instruction on appeal, the Supreme Court upheld it. (*Id.* at 632.) More generally, the Supreme Court held that the instructions of the court relating to the proper definition of a subterranean stream

contain a sound and correct statement of the law as it applies and ought to apply to streams of the character of the Los Angeles river. To hold otherwise would be destructive of rights long supposed to be certain and assured.

In addition, the *Pomeroy* court expressed concerns of its own about the potential effects of unregulated groundwater pumping on streamflows:

Upon the doctrine contended for by defendants [allowing for unregulated groundwater pumping] the whole of the Los Angeles river could be diverted from the city, and the sole water supply of a community of over a hundred thousand people completely cut off. For it is not alone the defendants who own water-bearing lands in the San Fernando Valley, and if they can abstract and convey to distant points the water in the land sought to be condemned others can do the same thing. . . . The doctrine, therefore, while ruinous to those who have built up a populous and prosperous city upon the faith that they were secure of a supply of water for domestic and municipal purposes, would afford no security to the defendants or to any one in their situation, for what they could take from the city others could take from them.

(*Id.* at 636.)

In sum, while *Pomeroy* is best known for approving Kinney's classification of groundwater into percolating groundwater and groundwater flowing in subterranean streams, it is also important for its approval of the trial court's instruction specifying that groundwater contributes to a subsurface stream is part of that stream.

Several years after *Pomeroy*, in *Montecito Valley Water Company v. City of Santa Barbara* (1904) 144 Cal. 578, the Supreme Court decided a case involving depletion of surface flows by groundwater diversions solely upon the ground of the hydrological connection between the groundwater and surface water, without any reference to the *Pomeroy* classification of percolating groundwater and subsurface streams. In *Montecito Valley*, plaintiff claimed that defendants had interfered with its right to the waters of Montecito Creek by driving tunnels into adjacent lands and intercepting groundwater flowing toward the river. (*Id.* at 578.) The court agreed with the plaintiff that the tunnels did "draw into themselves a part of the natural flow of the creek." (*Id.*) In response to defendants' argument that the waters diminished were percolating waters, the court, quoting *Vineland Irrigation Dist. v. Azusa Irrigation Co.* (1899) 126 Cal. 486, held:

"If, upon the other hand, the taking of this water by plaintiff [in *Vineland Irrigation Dist.*], as the court finds, creates an artificial draft upon the surface flow of the stream, draws down a part of it, and weakens and injures the natural bed of the stream, and tends to interrupt and carry away from the defendants the surface flow, and to deprive them of it, . . . defendants are entitled to an injunction to restrain this illegal interference." This last quotation presents the case declared by

the finding, so that it is not a new proposition in this state, *nor is it a new decision to declare that one who has no legal right to the surface flow of a stream may not, by indirection, acquire that right by a subterranean tapping and taking of it.*

(*Id.* (emphasis added).) In substance, in *Montecito Valley*, the Supreme Court held that any groundwater withdrawal that diminishes the surface flow of a stream effects a surface water diversion.

In *Los Angeles v. Hunter* (1909) 156 Cal. 603, the Supreme Court expressly held that where groundwater pumping diminishes the surface flow of a river, the water developed is a part of the subterranean flow of the river, *without regard to whether that water might be classified as percolating under the test of Los Angeles v. Pomeroy*. In *Hunter*, the City of Los Angeles filed an action against over 200 landowners in the San Fernando Valley to enjoin them from pumping groundwater that could diminish the flow of the Los Angeles River. (*Id.* at 604-05.) On appeal from a judgment for the City finding that the waters were part of the subterranean flow of the Los Angeles River, defendants, apparently arguing from *Pomeroy*, contended that the finding

eliminates from consideration the rainfall upon the surface of the valley—the water from all the surrounding mountains which not following well-defined channels, still by gravity is carried down and sinks into the valley lands; that the water flowing into the valley by numerous channels and sinking into the lands of the valley miles distant from the thread of the river, is by this finding treated as part of the stream long before, in the course of nature, it can have reached the true subterranean flow thereof. *So it is insisted by appellants that these waters are strictly percolating waters, . . .*

(*Id.* at 606 (emphasis added).)

The court brushed aside these arguments as irrelevant in view of the effect of the pumping on the surface and subterranean flow of the Los Angeles River:

But in the view which we take, *it is immaterial* whether the San Fernando Valley be considered a great basin, saturated by water from the inflow of the Los Angeles River and its tributaries, or saturated as a result of all the causes which appellants assign. . . . Unquestionably the San Fernando Valley is the great natural reservoir and supply of the Los Angeles River. Unquestionably the cutting off of this supply would as completely destroy the Los Angeles River as would the cutting off of the Great Lakes destroy the St. Lawrence. San Fernando Valley may indeed be regarded as a great lake filled with loose detritus, into which the drainage from the neighboring mountains flows, and the outlet of which is the Los Angeles River. Impeded by these soils, these waters of course move more slowly than they would in an open lake. But unquestionably the general movement of practically all is southeasterly to the Narrows, through and out of which flows the Los Angeles River proper. Unquestionably, also, a serious interruption or interference with this supply would as certainly impair the volume of water carried by the Los Angeles River as though the interruption and interference were with a surface flowing tributary thereof. *The waters of the San Fernando Valley, therefore, are not percolating waters in the common law sense of the term—vagrant, wandering drops moving by gravity in any and every direction along the line of least*

resistance. . . . If it be here conceded that the city of Los Angeles has the paramount right to the use of the waters of the Los Angeles River, then the abstraction of waters from this valley is as clearly an interference with that right as it would be if the valley, instead of being filled with debris, were an open lake from which the river drew its whole supply. *The doctrine of percolating waters as applied by the common law has of necessity been modified to meet the conditions existing in this state*, conditions which never confronted the authors of that body of laws, and of the existence of which it is safe to say they never conceived the possibility.

(*Id.* at 607-08 (emphasis added).)

Notably, the court stated that the groundwater of the San Fernando Valley was not percolating groundwater immediately after finding that the flow of the Los Angeles River could be diminished by pumping. The court went on to conclude that:

The finding that the waters developed in the wells of the appellants are part of the subterranean flow of the Los Angeles River was, as above discussed, abundantly sustained by the evidence. . . . The wells indisputably drew from this underground supply, with the effect of appreciably diminishing the surface flow.

(*Id.* at 609.)

In our view, *Hunter* and the cases informing it stand for the proposition that conclude that groundwater withdrawals that diminish the flow of a surface or subterranean river effect a diversion from the river. For purposes of this proceeding, this means that any groundwater withdrawal that may diminish the surface or subsurface flow of a river should be considered surface flow for purposes of determining the Board's jurisdiction. Additionally, the Board has permitting jurisdiction over groundwater that flows within a subterranean stream as defined by *Pomeroy*.

3. *Under this legal test, what physical characteristics should the SWRCB evaluate in distinguishing subsurface waters subject to the SWRCB's permitting authority from subsurface waters that are percolating groundwater?*

The Board should first evaluate whether the groundwater is hydrologically connected to a surface or subsurface river such that groundwater withdrawals could diminish the surface or subsurface flow of the river. If it is, then the Board should consider it as surface water for purposes of its permitting jurisdiction. If it is not, the Board should evaluate whether the groundwater flows through a known and definite channel according to the *Pomeroy* test.

In *Hunter* and related cases, the courts focused on evidence that stream flows were diminished by groundwater pumping. In *Hunter* itself, the court was satisfied by evidence showing that "the surface stream under normal conditions is proportionate to the contributions of water from rainfall and underground storage" in accepting "[t]he finding that the waters developed in the wells of [the pumpers] are part of the subterranean flow of the Los Angeles River." (*Hunter, supra*, 156 Cal. at 609.) In *Montecito Valley*, the court determined the amount of flow diverted from the river simply by measuring the flow of defendants' tunnels. (*Montecito, supra*, at 3.) The court also made a point to emphasize that it did not require evidence, for

purposes of the decision, of whether the tunnels diverted water directly from the river or simply lowered the groundwater table so that the flow was indirectly reduced, so long as the net result was to diminish the river's flow. (*Id.* at 4.) In *Lassen v. Apollonio* (1936) 5 Cal.2d 440, 444, the Supreme Court stated that where a party's well is in "close proximity to the stream [38 feet from the stream], with the other attending circumstances [evidence showing that the land underlying the bed and to either side was porous, and evidence showing that pumping diminished the surface flow of the stream], would seem to make out a prima facie case in favor of plaintiffs and cast upon defendant the burden of proving that his development of water had not interfered with the waters in the stream."

Under the *Pomeroy* classification, the test is defined by several physical characteristics: the groundwater must be flowing, the flow must be through a well-defined channel that is contracted and bounded, and the course of the channel must be known or capable of determination by reasonable inference. However, the *Pomeroy* court was satisfied with fairly limited, inferential evidence:

In this case the boundaries of the channel and the existence and course of the underground stream were unknown and undefined except so far as they could be inferred, but there was a great amount of evidence from which a reasonable inference would be drawn that the channel was bounded and defined by the sloping sides of the Cahuenga and Verdugo hills meeting under ground, and that there was a subsurface flow corresponding with the surface flow from west to east out through the gap. Without any excavation beneath the surface, or other test or experiment, all this could be inferred from the topography of the county, the amount of rainfall and the gradually augmenting volume of the surface stream in its approach to the narrowest point in the pass.

(*Pomeroy*, *supra*, 124 Cal. at 634.)

4. *What factors has the SWRCB considered in its past decisions regarding groundwater classification?*

In recent decisions on groundwater classification, the Board has focused primarily on the factors taken from the *Pomeroy* framework, but it has also devoted significant attention to evidence showing surface flow impacts from groundwater pumping. For example, *Orders on Four Complaints Filed Against the California-American Water Company*, respondent California-American Water Company delivered water to its customers primarily from 21 wells on the lower Carmel River. (WRO 95-10, at 6.) Environmental groups and local and state agencies alleged that Cal-Am's diversion was unauthorized and harmed public trust resources. (*Id.* at 7-9.) In finding for complainants, the Board evaluated geologic evidence that the subsurface flow of the Carmel River was through a known and definite channel and evidence that Cal-Am's diversions had an adverse impact on the public trust resources of the River, including riparian vegetation, wildlife resources, and fisheries resources. (*Id.* at 10-14, 25-28.) Both categories of evidence supported the Board's finding that "the aquifer underlying and closely paralleling the surface water course of the Carmel River is water flowing in a subterranean stream and subject to the jurisdiction of the SWRCB. (*Id.* at 38-389.) The Board found that "Cal-Am's wells are drawing water from the subterranean stream associated with the Carmel River." (*Id.* at 39.)

More recently, in *In the Matter of Application 29664 of Garrapata Water Company*

(Water Rights Decision 1639), the Board focused primarily on the factors from *Pomeroy*. The Board found that the both parties evidentiary presentations established that a subsurface channel was present, the course of the channel was known or capable of being determined by reasonable inference, and groundwater was flowing in the channel. (Decision 1639, Section 3.3.2 (1999).) The parties differed on whether the channel was bounded, and the Board used evidence indicating that the granitic bedrock was relatively impermeable as compared to the alluvium of the streambed to conclude that the channel was bounded and the Company's diversion fell within Board jurisdiction. (*Id.* at Section 3.3.1.)

5. *Should the legal test for determining what subsurface waters are subject to the SWRCB's permitting authority be changed? If so what legal test would be appropriate?*

Historically, California courts distinguished between percolating groundwater, which was not subject to the rules governing surface water, and subterranean flows, which were considered equivalent to groundwater, only because the relationship between surface water and groundwater was too poorly understood to consider them as a common resource. Where groundwater and surface water were determined in fact to be a common resource, they were treated as a common resource in law. (See cases cited in section 2, *supra*.)

Given the current state of our knowledge, it no longer makes sense to regulate surface water and groundwater separately. In our view, all groundwater should be subject to the Board's permitting jurisdiction. We recommend that the Board develop a proposal for legislation that would provide it with clear statutory authority to treat groundwater and surface water in law, as they are in fact, as a single resource.

The Board should also exercise the permitting jurisdiction it currently has to the fullest extent. To the extent that the Board currently determines what groundwater is subject to its permitting jurisdiction by reference to the *Pomeroy* framework alone, we believe that it should alter this test in accordance with the decision in *Los Angeles v. Hunter*, *supra*, and hold that any groundwater withdrawal that diminishes the surface or subsurface flow of a river should be considered as surface water for purposes of the Board's permitting jurisdiction. As discussed above, the line of cases culminating in *Hunter* provides authority for employing such a test.

In addition, academic commentators have often recommended that groundwater and surface water be administered as a common body of water where they are hydrologically connected. The noted water law analyst Frank Trelease stated: "Where . . . the stream and the groundwater are so closely connected that the use of one affects the other, the same law must be applied to both sources." (Trelease, "Conjunctive Use of Groundwater and Surface Water, 27 Rocky Mtn. Min. L. Inst. 1853, 1856 (1982), *quoted in* John D. Leshy and James Belanger, "Arizona Law Where Ground and Surface Water Meet," 20 Ariz. St. L. J. 657, 658-59 (1988).) The National Water Commission, a blue-ribbon body created by Congress, stated:

State laws should recognize and take account of the substantial interrelation of surface water and ground water. Rights in both sources of supply should be integrated, and uses should be administered and managed conjunctively. There should not be separate codifications of surface water law and ground water law; the law of waters should be a single, integrated body of jurisprudence.

(National Water Comm'n, *Water Policies for the Future* 233, Recommendation 7-1 (1973),

quoted in Leshy and Belanger, supra, at 659.)

Furthermore, most western states require permits for the use of groundwater. As of 1980, Alaska, Kansas, Montana, North Dakota, and Utah required permits for groundwater under unified surface and groundwater codes; and Colorado, Idaho, Nebraska, Nevada, New Mexico, Oregon, Washington, and Wyoming required permits under separate groundwater codes. (See Frank J. Trelease, "Legal Solutions to Groundwater Problems—A General Overview," 11 Pacific L. J. 863, 864-65 (1980).) In Colorado, all groundwater that takes a century or less to reach a stream is considered tributary to the stream and is governed by the law applicable to surface water. (*Kuiper v. Lundvall* (1974) 187 Colo. 40.)

Finally, administering groundwater pursuant to the Board's permitting jurisdiction is consistent with the overall character of California's water law. Article X, Section 2 of the Constitution provides the Board with broad and continuing authority to ensure that all uses of water within California conform are reasonable in light of contemporary conditions and needs. Under the Supreme Court's decision in *National Audubon Society v. Superior Court* (1983) 658 P.2d 709, 728, the state "has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible." The state's public trust obligation, whether it is acting through the courts or the Board, does not end once a diversion has been made; instead, "the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water." (*Id.*) It goes without saying that the Board can more efficiently and effectively discharge its obligations to ensure reasonable use and protect the public trust via permitting than after-the-fact enforcement proceedings. In order to carry out the mandates of Article X, Section 2 and the public trust doctrine, the Board must exercise its jurisdiction to the fullest. In our view, that jurisdiction encompasses groundwater that is hydrologically connected to the surface and subsurface flow of streams.

6. *Can quantifiable criteria be established to implement the legal test? What are the quantifiable criteria?*

One advantage to employing a test that would make any groundwater withdrawal that affects surface flows subject to Board jurisdiction is that quantifiable criteria can be established to implement the test. In 1985, the Colorado General Assembly defined nontributary groundwater (groundwater that would not be within the Board's permitting authority unless it met the *Pomeroy* criteria) as water "the withdrawal of which will not, within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal . . ." (Colo.Rev.Stat. § 37-90-103(10.5), *quoted in* J. Sax, R. Abrams, and B. Thompson, Jr., *Legal Control of Water Resources* (1991 2d ed.), at 458. This standard may or may not be appropriate for California, but it illustrates that quantifiable criteria can and have been established to implement legal tests based on hydrological connectivity.

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August 28, 2001
Comments of Defenders of Wildlife

We appreciate the Board's efforts in addressing the important issue of its permitting jurisdiction over groundwater and thank the Board for the opportunity to provide input for the use of its consultant. We look forward to the consultant's report and respectfully request an opportunity to comment on that document when it is released.

Thank you for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read "Brendan Fletcher". The signature is fluid and cursive, with the first name "Brendan" and last name "Fletcher" clearly distinguishable.

Brendan Fletcher
California Program Associate